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ABSTRACT

To discover the effects of breakfast on reading achievement a study was conducted comparing 100 primary students from the 1975-1976 school year before a school breakfast program was instituted and 100 students from the 1977-1978 school year who participated in a school breakfast program. Reading scores from the California Achievement Test administered at the completion of the second and third grades were available for all students. A significant difference was obtained from the computed vocabulary and reading comprehension comparisons in favor of the breakfast program group. However, it should be noted that a new principal was assigned to the school between the two years and there was no control of teacher assignment to the subjects. These variables could have influenced the results. (TJ)

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The Effects of a Breakfast Program on Reading Achievement of Elementary School Children

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Due to the increased emphasis on the fundamental skill of reading in recent years a great deal of attention has been given to the factors essential to normal growth in reading. The federal government has made literacy a priority goal, massive programs have been initiated to provide students with the "right to read," and researchers have investigated the factors that influence reading development.

Since the school is inevitably involved in helping to create the most favorable conditions that contribute to growth in reading, many special programs are being considered by public school educators. New and improved materials are being purchased, better trained teachers are being sought, specialists in the various disciplines are being employed, and programs intended to meet the needs of the whole child are being considered. One such program strives to improve children's nutrition since research has produced a substantial body of evidence that a direct relationship exists between inadequate diet and reduced learning power. Whether as a result of poverty, eating idiosyncracies, or lack of parental attention, children who suffer from nutritive deficiences tend to have deficits in their physical and mental development. It has been suggested that improved nutrition carries with it specific benefits and when combined with appropriate educational experiences will enable a child to become more fully functioning and involved in the learning process.

While most nutritionists would recommend that children need three balanced meals a day, it can be shown that breakfast is the most important

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meal. Studies have shown that children who do not eat breakfast do not function as well in school as those who have had a well-balanced breakfast.

Several research studies have supported the opinion that children become more alert and their attention span improves after a morning breakfast program is initiated. The Iowa Breakfast Studies reported that the majority of children evaluated definitely had a better attitude and a better scholastic record during the period when breakfast was included in the daily dietary regimen than when it was omitted.

According to Adelle Davis, a noted nutritionist, the way an individual thinks, acts, and feels throughout each day is determined by the type of breakfast he eats. She believes that your breakfast establishes how readily your body can produce energy that day or more specifically the amount of sugar in your blood. Many studies have been conducted to identify the factors influencing the level of blood sugar and the results suggest that a breakfast which consists of orange juice, bacon, eggs, toast, jam, and whole milk would enable the blood sugar to rise and stay at a normal level throughout the day. According to researchers, no breakfast or the wrong selection of food for breakfast could cause fatigue and inefficiency during the day.

The acceptance of this knowledge and the concern of the administration to meet the needs of students influenced the Oxford Public School to incorporate a school breakfast program in 1976 for students enrolled in the Bramlett Elementary School (grades 1-3). The advent of this breakfast program afforded a unique opportunity to investigate the effects of

it on the learning process as reflected by reading achievement scores. One hundred students were randomly selected from the 1975-76 school year (prior to the school breakfast program), and one hundred students were randomly selected from those who participated in the breakfast program in 1977-78. All students in the sample had completed the third grade and scores from the California Achievement Test (CAT) were available for each student at the completion of the second grade and third grade.

Analysis of covariance was the statistical treatment used to compare reading achievement between the students who did not participate in the breakfast program (Group I) and the students who were involved in the breakfast program (Group II). Two sub-tests of the CAT (vocabulary and comprehension) were analyzed separately. The second grade score was used as the covariate and the third grade score was the dependent variable.

A significant difference beyond the 0.01 level was obtained from the computed vocabulary and reading comprehension comparisons in favor of the breakfast program group. As seen in Table I, the difference between the adjusted means on vocabulary was 1.7 (grade equivalent), and the difference between the comprehension means was 1.6.

Table I

Results of Analysis of Covariance
for Effects of Breakfast Program
on Reading Achievement Scores of Elementary School Children

Sub-test	Group I	Group II	df	F Ratio *
Vocabulary	2.9	4.6	1,198	13.81
Comprehension	3.7	5.3	1,198	15.85

* F-Ratio required for the 0.01 level of significance was 6.63.

These results indicate a significant improvement in reading vocabulary and comprehension since the initiation of the breakfast program at Bramlett. Certainly, proponents of breakfast at school would conclude that improved nutrition influenced the improved learning that was noted. However, there were intervening variables that must be considered as other possible influences on this improvement. A new principal was assigned to the school in 1976, and certainly a change in philosophy and organization of the administration of the school program could be a determining factor in the overall increase of achievement test scores. Also, there was no control of teacher assignment to the subjects used in the study since they were randomly chosen from the total grade enrollment. However, since research studies and proponents of better nutrition conclude that a good breakfast provides nutrients needed to help children stay alert and involved during the school day, it can be assumed that the breakfast program at Bramlett did have a positive effect on the improved learning as shown in the comparison of the reading achievement scores.

Information of this nature should influence public school administrators to incorporate a school breakfast program in their school. It seems that a good breakfast is a material asset to school children both in the matter of attitude and scholastic achievement. In fact, the current administration of the United States Department of Agriculture has reported that one of their priorities is the expansion of the school breakfast program because of the demonstrated contribution to education and well-being that school breakfast can make. Unfortunately only

20,000 schools currently offer school breakfasts as compared to over 90,000 schools that participate in the USDA National School Lunch Program. It has even been suggested that school-tax dollars could be saved if a high-protein breakfast was initiated that would enable students to experience efficiency throughout the day and the amount of money spent on remedial materials and instruction to cope with problems that occur as a result of nutritional inadequacies could then be reduced.

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